

1 We claim:

2 1. A forensic light source comprising:

3 (a) a housing;

4 (b) a light source contained within said housing, said light source having a light
5 output;

6 (c) a power supply coupled to said light source;

7 (d) a first filter support member adjustably and movably mounted on said
8 housing, said first filter support member comprising (i) a plurality of first filter
9 receiving supports, and (ii) a plurality of first light filters each positioned in one of said
10 first filter receiving supports, said first filter support member being adjustable to
11 position any one of said first light filters to receive said light output and to filter said
12 light output to produce a filtered light output and transmit said filtered light output;
13 and

14 (e) a second filter support member adjustably and movably mounted on said
15 housing, said second filter support member comprising (i) a plurality of second filter
16 receiving supports, and (ii) a plurality of second light filters each positioned in one of
17 said second filter receiving supports, said second filter support member being
18 adjustable to position any one of said second light filters to receive said filtered light
19 output and to filter said filtered light output to produce a twice filtered light output
20 and transmit said twice filtered light output.

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22 2. A light source as in claim 1 wherein said light source further comprises a handle
23 secured to said housing, said handle being positioned and configured to be held by one
24 hand and said the first and second filter support members being positioned to be
25 adjusted by the thumb of said one hand.

26

27 3. A light source as in claim 1 further comprising a fan, and wherein said housing has
28 at least one opening for air intake by said fan, and at least one opening for air exhaust

1 by said fan.

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3 4. A light source as in claim 1 further comprising focusing optics, said focusing optics
4 dimensioned and configured to allow the user to focus light from said light source.

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6 5. A light source as in claim 4 wherein said focusing optics comprises a lens mounted
7 within a tubular member, said tubular member slidably mounted on a second tubular
8 member, said second tubular member being integral with said housing, said focusing
9 optics being maintained in focus by a friction fitting.

10

11 6. A light source as in claim 4 further comprising a reflective member, positioned to be
12 coupled to said light source to direct said light source output toward said focusing
13 optics.

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15 7. A light source as in claim 1 wherein said housing is a shock resistant housing and
16 further comprising a handle configured and dimensioned to be held by less than the
17 user's full hand.

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19 8. A light source as in claim 1 wherein said power supply is an external battery pack.

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21 9. A light source as in claim 1 wherein said power supply is an external transformer
22 and connection to a standard household power supply.

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24 10. A light source as in claim 1 wherein said light source is a 100 watt bulb.

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26 11. A light source as in claim 1 wherein at least one of said filter support members
27 comprises a rotatably mounted light filtering wheel which defines a hole which does
28 not contain a filter to allow light to be passed through said hole without being filtered.

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1 12. A light source as in claim 3 further comprising a power control switch, said power
2 control switch turning on said fan and said light source simultaneously.

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4 13. A light source as in claim 3, further comprising a power control switch, said power
5 control switch turning on said fan and said light source independently.

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7 14. A light source as in claim 3 further comprising a power control switch, said power
8 control switch having settings which turn the light and fan on simultaneously, turn the
9 fan while keeping the light off, and keep the light and fan off.

10

11 15. A ruggedized forensic light source comprising:

12 (a) a housing, said housing comprising a shock resistant support, said housing
13 having at least one opening for air intake and at least one opening for air exhaust, said
14 shock resistant housing further comprising a handle configured and dimensioned to be
15 held by less than a user's full hand;

16 (b) a light source mounted within said housing on said shock resistant support,
17 said light source having an output;

18 (c) a fan;

19 (d) an external power supply;

20 (e) a power control switch coupled to said light source, said fan and said power
21 supply to supply power from said power supply to said light source and/or said fan
22 when activated by the user;

23 (f) at least one filter wheel mounted in front of said light source output, said
24 filter wheel comprising a plurality of light filters, and a section devoid of a light filter
25 to allow light to be passed through said filter wheel without being filtered, said filter
26 wheel being mounted for rotation and positioned, dimensioned and configured to be
27 adjusted by the user's thumb while the user grasps said handle with his remaining
28 fingers;

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- 1 (g) focusing optics positioned to focus light from said light source; and
2 (h) a reflective member, functionally coupled to said light source to direct at
3 least a portion of said light source output toward said focusing optics.
4

5 16. A light source as in claim 15 wherein said focusing optics comprises a lens,
6 mounted within a tubular member, said tubular member slidably mounted on a
7 second tubular member, said second tubular member being secured two said shock
8 resistant housing, said focusing optics being kept in the position, to which it has been
9 slidably moved, by a friction fitting.
10

11 17. A light source as in claim 15 wherein said power supply is an external battery
12 pack.
13

14 18. A light source as in claim 15 wherein said power supply is an external transformer
15 and a connection device for coupling to a standard household power source.
16

17 19. A light source as in claim 15 wherein said power control switch turns on said fan
18 and said light source simultaneously.
19

20 20. A light source as in claim 15 wherein said power control switch turns on said fan
21 and said light independently.
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23 21. A light source as in claim 15 wherein said power control switch has settings for
24 turning the light and fan on, for turning the fan on and keeping the light off, and
25 keeping the light and fan off.
26

27 22. A method for using a forensic light source comprising:
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- (a) a user's grasping a handle of a light source housing with up to four fingers,

- 1 leaving the user's thumb free;
2 (b) picking up said housing from its resting place while leaving the power
3 supply stationary;
4 (c) activating a light and/or fan within said housing;
5 (d) rotating at least one filter wheel with said users' thumb to provide a desired
6 wavelength or range of wavelengths of light output;
7 (e) focusing the light output by adjusting a slidably mounted lens with a friction
8 fitting;
9 (f) scanning the crime scene.
10
11 23. A method as in Claim 22 further comprising the steps of:
12 (g) rotating at least one filter wheel with users' thumb to provide a new desired
13 wavelength or range of wavelengths of light output;
14 (h) refocusing the light output by adjusting a slidably mounted lens with a
15 friction fitting; and
16 (i) re-scanning the crime scene.
17
18 24. A method as in Claim 23 further comprising the step of:
19 (j) making a digital or photochemical photograph of at least a portion of the
20 crime scene with or without camera filters under light output by said forensic light
21 source.
22
23 25. A light source as in claim 1 wherein said first and second filter support members
24 are light wheels and said filters are bandpass filters, said filters being arranged such
25 that their wavelengths, when arranged in a sequential order, are alternately placed on
26 said first wheel and then said second wheel.
27
28 26. A light source as in claim 25 wherein the selection of one filter on said first

1 wheel and the selection of a second filter on said second wheel results in a bandpass
 2 narrower than the bandpass of said one filter or said second filter, the combined
 3 characteristic of said one filter and said second filter being formed by the juxtaposition
 4 of the characteristics of said one filter and said second filter and a bandpass
 5 wavelength range between said one and said second filters, and a narrower bandwidth
 6 than either said one or said second filters.

7

8 27. A light source as in claim 24, wherein said two filter wheels comprise, a first wheel
 9 and a second wheel, each of said filter wheels comprising a plurality of bandpass
 10 filters, said filters being arranged such that their wavelengths, when arranged in a
 11 sequential order, are alternately placed between said first wheel and said second
 12 wheel, said filters having bandwidths which allow them to be combined with filters on
 13 the other filter wheel.

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15 28. A light source as in claim 27, further comprising a third filter wheel holding a
 16 plurality of additional filters.

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18 29. A light source as in claim 28, wherein said additional filters are band reject filters.

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20 30. A ruggedized forensic light source comprising:

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(a) a shock resistant housing;

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(b) a light source contained within said housing, said light source having a light
 23 output;

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(c) an external power supply located outside said housing coupled to said light
 25 source;

26

(d) a power control switch coupled to said light source and said power supply,
 27 said power control switch configured and dimensioned to supply power from said
 28 power supply to said light source when activated by the user; and

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(c) at least one filter wheel comprising a plurality of filters mounted in front of said light source output to filter said light output, said filter wheel comprising a plurality of light frequency adjusting filters.

31. A forensic light source comprising:

(a) a housing;

(b) a light source contained within said housing, said light source having a light output;

(c) an external power supply located outside said housing coupled to said light source;

(d) a power control switch coupled to said light source and said power supply, said power control switch configured and dimensioned to supply power from said power supply to said light source when activated by the user; and

(e) at least one filter wheel comprising a plurality of filters mounted in front of said light source output to filter said light output, said filter wheel comprising a plurality of wavelength bandpass filters.

32. A forensic light source comprising:

(a) a housing;

(b) a light source contained within said housing, said light source having a light output;

(c) a power supply coupled to said light source;

(d) a first filter support member adjustably and movably mounted on said housing, said first filter support member comprising (i) first, second, and a third filter receiving supports, and (ii) first, second and third wavelength bandpass filters positioned in said first, second and third filter receiving supports respectively, said first filter support member being adjustable to position any one of said first, second and third wavelength bandpass filters to receive said light output and to filter said

1 light output to produce a filtered light output and transmit said filtered light output;
2 and

3 (e) a second filter support member adjustably and movably mounted on said
4 housing, said second filter support member comprising (i) fourth and fifth filter
5 receiving supports, and (ii) fourth and fifth bandpass filters positioned in said fourth
6 and fifth filter receiving supports, said second filter support member being adjustable
7 to position any one of said fourth and fifth wavelength bandpass filters to receive said
8 filtered light output and to filter said filtered light output to produce a twice filtered
9 light output and transmit said twice filtered light output, said first filter passing
10 wavelengths greater than wavelengths passed said second filter, said second filter
11 passing wavelengths greater than wavelengths passed said third filter, said third filter
12 passing wavelength greater than wavelengths passed said fourth filter, and said
13 fourth filter passing wavelength greater than wavelengths passed by said fifth filter.

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